IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

NETWORK-1 SECURITY SOLUTIONS, INC.	§	
	§	
Plaintiff,	§	
	§	**CASE NO. 6:05-CV-291**
vs.	§	
	§	
D-LINK CORPORATION AND D-LINK SYSTEMS, INC.,	§	
	§	
Defendants.	§	

MEMORANDUM OPINION AND ORDER

This Memorandum Opinion construes the terms in U.S. Patent No. 6,218,930 ("the '930 patent"). Claims 1, 2, 6, and 9 contain disputed terms. Also before the Court is Plaintiff Network-1's Motion to Strike the Declaration of Rich Seifert (Docket No. 118-1), which the Court **DENIES.**

BACKGROUND

The '930 patent issued April 17, 2001, to Boris Katzenberg. The '930 patent discloses a set of circuits that enable the delivery of operating power over Ethernet (commonly referred to as "PoE") only to those access devices that are designed to accept such power. PoE technology is not new. PoE delivers both data and operating power to network access devices over an Ethernet network, allowing devices such as IP voice over telephones, security cameras, etc. to be mounted in areas without regard for whether there is an adequate separate power supply for the device.

The problem with traditional PoE systems is that damage can occur when power is delivered to an access device that is not designed to accept it. The '930 patent provides "methods and apparatus for reliably determining if a remote piece of equipment is capable of accepting remote

power." Col.1:41–44. "It is another object of this invention to provide methods and apparatus for delivering remote power to remote equipment over 10/100 switched Ethernet segments and maintain compliance with the IEEE 802.3 standards." Col. 1:45–48.

APPLICABLE LAW

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). In claim construction, courts examine the patent's intrinsic evidence to define the patented invention's scope. *See id.*; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). This intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id*. Other asserted or unasserted claims can also aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id*. Differences among the claim terms can also assist in understanding a term's meaning. *Id*. For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id*. at 1314–15.

Claims "must be read in view of the specification, of which they are a part." *Id*. (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 978 (Fed. Cir. 1995)). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Id*. (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id*. Also, the specification may resolve ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex, Inc.*, 299 F.3d at 1325. But, "although the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998); *see also Phillips*, 415 F.3d at 1323. The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc., v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the specification, a patent applicant may define a term in prosecuting a patent.").

Although extrinsic evidence can be useful, it is "less significant than the intrinsic record in determining 'the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but

technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id*. at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition is entirely unhelpful to a court. *Id*. Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id*.

The patent in suit also contains means-plus-function limitations that require construction. Where a claim limitation is expressed in "means plus function" language and does not recite definite structure in support of its function, the limitation is subject to 35 U.S.C. § 112, ¶ 6. *Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). In relevant part, 35 U.S.C. § 112, ¶ 6 mandates that "such a claim limitation 'be construed to cover the corresponding structure . . . described in the specification and equivalents thereof.'" *Id*. (citing 35 U.S.C. § 112, ¶ 6). Accordingly, when faced with means-plus-function limitations, courts "must turn to the written description of the patent to find the structure that corresponds to the means recited in the [limitations]." *Id*.

Construing a means-plus-function limitation involves multiple inquiries. "The first step in construing [a means-plus-function] limitation is a determination of the function of the means-plus-function limitation." *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). Once a court has determined the limitation's function, "the next step is to determine the corresponding structure disclosed in the specification and equivalents thereof." *Id*. A "structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id*.

Moreover, the focus of the "corresponding structure" inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is "clearly linked or associated with the [recited] function." *Id*.

CLAIM 1

With the disputed terms in bold, claim 1 states:

> 1. Apparatus for remotely powering access equipment in a data network, comprising:
> a **data node** adapted for data switching,
> an **access device** adapted for data transmission,
> at least one **data signaling pair** connected between the data node and the access device and arranged to transmit data therebetween,
> a main power source connected to supply power to the data node,
> a **secondary power source** arranged to supply power from the data node via said data signaling pair to the access device,
> **sensing means** for delivering a **low level current** from said main power source to the access device over said data signaling pair and sensing a resulting voltage level thereon, and
> **control means** responsive to said voltage level and adapted to control power supplied by said **secondary power source** to said access device in response to a **preselected condition** of said voltage level.

Data Node

The parties and the Court agree that the term should be construed as "Ethernet switch or hub."

Access Device

The parties and the Court agree that the term should be construed as "a piece of equipment that requires power to access a network and to receive and transmit data."

Data Signaling Pair

The parties and the Court agree that the term should be construed as "a pair of wires used to

transmit data between the data node and the access device."

Secondary Power Source

The parties agree to part of the construction of secondary power source. The agreed portion states: secondary power source "means a source of power connected to provide power between the data node and the access device using the data signaling pair." The parties disagree on the relationship between the recited main and secondary power sources. The Court modifies D-Link's proposed construction and further construes the term as "the secondary power source is physically separate from the main power source." Network-1 argues the secondary power source may be derived from the main power source, or separate.

The claim language describes a main power source and a separate power source. Col. 4: 17–20. The parties do not dispute that two sources exist; however Network-1 argues that these two sources do not have to be separate, but they can both be derived from the main power source. Network-1 points to Claims 1 and 6 in support of its argument that there is no language in the patent that restricts the configuration, placement or construction of the main or secondary power sources, nor do the independent claims specify any relationship between the two power sources. *See* Col 4:10–30, 50–65. However, Network-1 was unable to demonstrate in the *Markman* hearing or in its briefing how these two power sources, which perform two separate functions according to the claim language, could be the same, or "not separate."

Claim 1 specifies that the main power source provides a driving point for the load established by the data node and specifies that the secondary power source provides an additional driving point for the load established by the access device. *See* Col. 4:18–22. Claim 1 does not specify whether or not the additional driving point derives the power that it delivers to the access device from the

main power source. The additional driving point, however, would necessarily be physically separate from the main power source driving point because each "drives" separate loads. Looking at the plain language of the claim, the Court construes the claim as requiring the secondary source to be physically separate.

Sensing Means

The parties do not dispute that this limitation should be construed as a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6. The parties agree that the functions of the sensing means are "(1) delivering a low level current from said main power source to the access device over said data signaling pair, and (2) sensing a resulting voltage level thereon." The parties disagree on the construction of "low level current" (discussed in the following section) and on the corresponding structure. The corresponding structure is "lines 18 and 20, the series-connected resistors 26 and 30, and equivalents of that structure."

Network-1 included A/D converter and microprocessor 24 in its proposed corresponding structure, but this part of detector 22 is neither part of the closed circuit loop through which the low level current flows, nor does it "sense" a resulting voltage level on the data signaling pair. *See* Col. 2: 55–60. The A/D converter and microprocessor 24 merely measure a voltage drop in the return path and analyze the measurements to determine whether a preselected condition of the voltage level exists. Col. 3:1–2.

D-Link argues that there is no corresponding structure because the specification does not clearly associate a structure with the functions. In the alternative, D-Link asserts the structure, at a minimum, includes the following components: power source 16, the circuits that provide that power-lines 18, high data rate network cable 12, and lead 20, switch 28, resistors 26 and 30, operator 32,

A/D converter and microprocessor 24, and software (undisclosed). D-Link's argument that the specification does not clearly associate a structure with the functions is based on case law requiring the specification to "clearly associate the structure with performance of the function." *See Cardiac Pacemakers*, 296 F.3d at 1113. D-Link's interpretation of the legal requirement "clearly associate" improperly requires an overly expansive discussion of the details of the implementation. The law only requires that the structure be disclosed in such a manner that one skilled in the art would know and understand what structure corresponds to the means limitation. *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1382 (Fed. Cir. 1999).

The closed circuit loop carrying the low level current consists of lines 18 and 20, the signaling pair 12, and the resistors 26 and 30. *See* Col. 2:59–65 and Fig. 1. Signaling pair 12 is not part of the resistive element that is connected to the A/D converter for purposes of "measuring a voltage drop in the return path." *See* Col. 3:2. As described in the specification, after the low level current is delivered, the voltage drop is measured in the return path. The return path is described as being through lead 20 and resistors 26 and 30. Col. 2: 57–58, 61, 63–64. But "sensing" the voltage on the signaling pair resulting from the delivery of a low level current is performed only by resistors 26 and 30. *See* Col. 3:2. The A/D converter merely takes periodic samples of the voltage level at the node where resistors 26 and 30 connect to line 20, not on the voltage signaling pair. *See* Col. 2: 59–60. The converter and microprocessor perform functions relating to the control means and not the sensing means, and thus they are not part of the corresponding structure. Accordingly, the Court does not include A/D converter and microprocessor 24 in its corresponding structure.

Low Level Current

The Court modifies D-Link's proposed construction and construes the term as "a current

sufficient to cause the access device to start up, but not sufficient to sustain the start up."[1] Network-1 argues the term should be construed as "a detection current too small to sustain operation of the access device." During the *Markman* hearing, D-Link described the current as sufficient to "tickle" the access device, but insufficient to sustain start up. In its arguments, Network-1 focused on the sustaining language in its proposed construction. However, in the *Markman* hearing, Network-1 pointed to D-Link's own claim construction expert's testimony in support of Network-1's position that the low level current is not limited to one value.[2] While the Court agrees that the low level current can have more than one value, in relying on this testimony Network-1 bolstered D-Link's argument that the current must both be too small to sustain start up *and* strong enough to cause the access device to start up. *See* Col. 3:14–16.

D-Link's proposed construction has been modified because the references to a specific voltage of 20 ma and the dc-dc switching supply are attempts to adopt the preferred embodiment's limitations into the claim construction. The 20 ma value is merely the illustrative value in the preferred embodiment.[3] The 20 ma value is disclosed with regard to the "network interface," whereas the claim more generally specifies a low level current delivery to the access device. *See*

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[1] D-Link's proposed construction states "a current, of approximately 20 ma, sufficient to cause a dc-dc switching supply in the access device to start up, but not sufficient to sustain the start up."

[2] The testimony reads:

> Question:"But would an electrical engineer–a person of ordinary skill in this art, an electrical engineer with several years of experience, read the patent such that the low level current could have only one value?
>
> Answer: No. You could make implementations of devices according to the teachings of the patent that used different values of the low level current **as long as that low level current was sufficient to stimulate a response from the device, yet insufficient to sustain its operation**.

Dep. of Rich Seifert, P.155 L:2–12 (emphasis added)

[3] The Court notes that D-Link's own claim construction expert testified that a person skilled in the art would not read the patent such that the low level current could have only one value.

Cols. 3:12–16, 4:23–25. In addition, the dc-dc switching supply is also illustrative. *See* Col. 3:12–16. The claim language itself does not recite an access device power supply; it merely states "for delivering a low level current from said main power source to the access device." Col. 4:23–24. For these reasons, the Court declines to include "of approximately 20 ma" and "dc-dc switching supply" in its construction.

Control Means

The parties do not dispute that this limitation should be construed as a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6. As stated by the claim language itself, the function is "to control power supplied by said secondary power source to said access device." D-Link proposes two functions: (1) responding to said voltage and (2) controlling power supplied by said secondary power source to said access device in response to a pre-selected condition of said voltage level. D-Link's first proposed function, responding to said voltage level, is not a separate function. "Responding to said voltage level" sets forth a characteristic of the control means, but it does not set forth any additional affirmative action that the control means is undertaking. *See* Col. 4:26.

Network-1 argues that the function should be construed as "causing power transmission via the data signaling pair to remotely power the access device, if a preselected condition is met." Network-1 cites to the claim language in support for its construction, and the focus of this term in the *Markman* hearing was on the corresponding structure not the functions. In its brief, Network-1 states the recited function of the control means as "responding to said voltage level and controlling power supplied by said secondary power source to said access device in response to a preselected condition of said voltage level." Plaintiff Network-1's Opening Claim Construction Brief, p. 28.

A district court should not redefine the stated function in a means-plus-function limitation,

i.e., by expanding or narrowing the stated function. *See Micro Chem., Inc. v. Great Plains Chem. Co., Inc.* (*Micro Chem. II*), 194 F.3d 1250, 1258 (Fed. Cir. 1999) ("The statute does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim. Nor does the statute permit incorporation of structure from the written description beyond that necessary to perform the claimed function."). Accordingly, the Court relies on the claim language and determines the claim sets forth the function as "to control power supplied by said secondary power source to said access device."

The parties also disagree about the corresponding structure. The corresponding structure is "A/D converter and microprocessor 24, Switch 28, and the equivalents thereof." D-Link argues there is no corresponding structure because the specification does not clearly associate a structure with the functions. As with its argument for the structure in sensing means, D-Link's argument that the specification does not clearly associate a structure with the functions is based on case law requiring the specification to "clearly associate the structure with performance of the function." *Cardiac Pacemakers*, 296 F.3d at 1113. As with sensing means, D-Link's interpretation of the legal requirement "clearly associate" improperly requires an overly expansive discussion of the details of the implementation. The law only requires that the structure be disclosed in such a manner that one skilled in the art would know and understand what structure corresponds to the means limitation. *Atmel Corp.*, 198 F.3d at 1382.

Network-1 argues the corresponding structure is A/D converter and microprocessor 24 and the functional equivalents thereof. Network-1 points to figure 1 and the accompanying description in support of its construction. The Court agrees that the A/D converter and microprocessor 24 are part of the corresponding structure; however, the Court also includes Switch 28 in the structure. *See*

Cols. 2:60–65, 3:1–10. Switch 28 controls the current through the data signaling pair. When the switch is open, a low level of current flows; when it is closed resistor 26 is short-circuited and a high level of current flows. *See* Col. 3:16–22. A/D converter and microprocessor 24 activate switch 28 to the closed position when a preselected condition of the voltage level is detected and therefore is responsive to that condition. *See id*. Together, these components "control" the power supplied by the secondary power source to the access device in response to a preselected condition and are thus included in the control means corresponding structure.

Preselected Condition

The Court modifies Network-1's proposed construction and construes the term as "a parameter of the voltage on the signaling pair that indicates whether an access device is able to accept remote power from the data node." Network-1's proposed construction omits the term "of voltage on the data signaling pair." At the *Markman* hearing, Network-1 said it did not include this term because it is redundant as the term is already stated in the claim, "preselected condition of said voltage level." Col. 4:29. However, this language should be included in the construction because it is helpful to the jury's understanding of the term.

D-Link's argues the term should be construed as:

> preselected condition refers to three possible voltage level conditions: (1) no voltage drop; (2) a fixed level voltage drop; or (3) a varying level voltage drop. If conditions (1) or (2) are detected (no voltage drop or a fixed voltage drop), then the access device is identified as one that is unable to support remote power feed. If condition (3) is detected (a varying drop), then the access device is identified as one that is able to support remote power feed.

Network-1 argues that this construction seeks to limit the claim to the preferred embodiment. In the *Markman* hearing, D-Link argued that its construction is correct in light of *Bell Atlantic Network*

Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258 (Fed. Cir. 2001). In *Bell Atlantic*, the district court construed the term "plurality of different modes" as limited to three specific categories of modes. *Id*. at 1269. The patentee argued that the universe of modes contemplated by the patent was not limited to the three categories discussed by the district court. The court of appeals upheld the construction citing to the specification language, which stated "the system operates in one of three selectable modes." *Id*. at 1271. The court was careful to note that limitations from the specification generally may not be read into the claims. *Id*. at 1270. However, the court further based its decision on the patent prosecution history. *Id*. at 1273. During the patent prosecution, the patentee made concessions because the examiner rejected the relevant claims as obvious. *Id*. In an attempt to distinguish his invention from the prior art, the patentee made statements that narrowed the scope of "modes." *Id*.

In the present case, the specification language discusses three states which can be determined after the delivery of the low level current: no voltage drop, a fixed level voltage drop, or a varying level voltage drop. Col. 3:2–4. Although the language in the preferred embodiment does discuss three specific states, the Court is unpersuaded by D-Link's argument that the construction should be limited to these three states. Unlike the *Bell* patent, the patentee in this case did not make any concessions during the prosecution of this patent. The examiner in this case issued no claim rejections or objections, and the USPTO allowed the patent less than a year after the application was filed.

CLAIM 2

With the disputed terms in bold, claim 2 states:

> 2. Apparatus according to claim 1, wherein there are at least two data signaling pairs connected between the data node and the access device to supply **phantom power**

> from the secondary source to the access device, and wherein said access device includes a pair of data transformers having center taps connected for locally powering the access device.

Phantom Power

The Court modifies Network-1's proposed construction and construes the term as " operating power transmitted over the data signaling pairs." Network-1 omitted the word "operating" from its proposed construction. Phantom power is the power that is delivered to an access device over the data signaling pair as opposed to power delivered from a wall outlet. *See* Col. 3:44–45. The type of power delivered is operating power for the device, thus the Court includes the word "operating" in its construction.

Network-1 also used the phrase "over a data signaling pair" as opposed to D-Link's proposed construction, "over . . . data signaling pairs." The term "phantom power" appears in Claim 2, which states "apparatus according to claim 1, wherein there are at least two data signaling pairs . . . ." Therefore, the Court construes the term as having "data signaling pairs," plural.

CLAIM 6

> Method for remotely powering access equipment in a data network, comprising:
>
> providing a data node adapted for data switching, an access device adapted for data transmission, at least one data signaling pair connected between the data node and the access device and arranged to transmit data therebetween, a main power source connected to supply power to the data node, and a secondary power source arranged to supply power from the data node via said data signaling pair to the access device,
>
> delivering a low level current from said main power source to the access device over said data signaling pair,
>
> sensing a voltage level on the data signaling pair in response to the low level current, and
>
> controlling power supplied by said secondary power source to said access device in

response to a preselected condition of said voltage level.

CLAIM 9

Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

The parties and the Court agree that all terms in Claims 6 and 9 that are identical to construed terms in Claims 1 or 2 (whether agreed or disputed) should receive the same constructions.

Motion to Strike the Declaration of Rich Seifert

Network-1 also filed a motion to strike the declaration of D-Link's claim construction expert, Rich Seifert (Docket No. 118-1). Network-1 asserts that the Court should strike Seifert's declaration for two reasons. First, Network-1 asserts D-Link withheld relevant documents. Network-1 issued a subpoena that included a request for documents from Seifert. D-Link served objections to the requests. Seifert produced responsive documents to D-Link's counsel, but counsel withheld the documents believing they were non-responsive. One month after Seifert's deposition, D-Link produced the eight hundred pages of documents used or generated by Seifert in forming his opinion.

Second, Network-1 claims that it was unable to fully depose Seifert because D-Link was so uncooperative that Network-1 was required to stop the deposition and call the court hotline to resolve their disputes. Network-1 argues that because it was not able to fully depose Seifert and because of the late document production, D-Link should not be able to rely on Seifert's declaration in its *Markman* briefing.

D-Link responds that it had a good faith belief that the documents it withheld were non-responsive because the parties had an agreement to limit discovery at that time to claim construction

issues and that it did ultimately produce all documents to Network-1. D-Link also argues that Network-1 had more than sufficient opportunity to fully depose Seifert because Seifert was questioned by two of Network-1's attorneys, Network-1 continued the deposition after the hotline dispute, without interruption by D-Link, for over five hours, and Network-1 voluntarily ended the deposition with the statement "I don't think we have any further questions for this witness at this time."

Because the documents were produced to Network-1 and Network-1 had ample opportunity to fully question Seifert, the Court **DENIES** the motion to strike.

CONCLUSION

For the foregoing reasons, the Court interprets the claim language in this case in the manner set forth above. For ease of reference, the Court's claim interpretations are set forth in a table as Appendix A. The motion to strike the Declaration of Rich Seifert is **DENIED**.

So ORDERED and SIGNED this 20th day of November, 2006.

LEONARD DAVIS
UNITED STATES DISTRICT JUDGE

APPENDIX A

CLAIM CONSTRUCTION FOR US PATENT NO. 6,218,930

Claim Language	Court's Construction
1. Apparatus for remotely powering access equipment in a data network, comprising: a **data node** adapted for data switching,	"**Data node**" means "Ethernet switch or hub"
an **access device** adapted for data transmission,	**"Access device"** means "a piece of equipment that requires power to access a network and to receive and transmit data."
at least one **data signaling pair** connected between the data node and the access device and arranged to transmit data therebetween, a main power source connected to supply power to the data node,	**"Data signaling pair"** means "a pair of wires used to transmit data between the data node and the access device."
a **secondary power source** arranged to supply power from the data node via said data signaling pair to the access device,	"**Secondary power source**" means "a source of power connected to provide power between the data node and the access device using the data signaling pair. The secondary power source is physically separate from the main power source."
sensing means for delivering a **low level current** from said main power source to the access device over said data signaling pair and sensing a resulting voltage level thereon,	The "**sensing means**" recites two functions: (1) "delivering a low level current from said main power source to the access device over said data signaling pair," and (2) "sensing a resulting voltage level thereon." The corresponding structure is "lines 18 and 20, the series-connected resistors 26 and 30, and equivalents of that structure."

	"**Low level current**" means "a current sufficient to cause the access device to start up, but not sufficient to sustain the start up."
and **control means** responsive to said voltage level and adapted to control power supplied by said secondary power source to said access device in response to a **preselected condition** of said voltage level.	The "**control means**" function is "to control power supplied by said secondary power source to said access device." The corresponding structure is "A/D converter and microprocessor 24, Switch 28, and the equivalents thereof."
	"**Preselected condition**" means "a parameter of the voltage on the signaling pair that indicates whether an access device is able to accept remote power from the data node."
2. Apparatus according to claim 1, wherein there are at least two data signaling pairs connected between the data node and the access device to supply **phantom power** from the secondary power source to the access device, and wherein said access device includes a pair of data transformers having center taps connected for locally powering the access device.	**"Phantom power"** means "operating power transmitted over the data signaling pairs."

6. Method for remotely powering access equipment in a data network, comprising: providing a data node adapted for data switching, an access device adapted for data transmission, at least one data signaling pair connected between the data node and the access device and arranged to transmit data therebetween, a main power source connected to supply power to the data node, and a secondary power source arranged to supply power from the data node via said data signaling pair to the access device, delivering a low level current from said main power source to the access device over said data signaling pair, sensing a voltage level on the data signaling pair in response to the low level current, and controlling power supplied by said secondary power source to said access device in response to a preselected condition of said voltage level.	All terms in Claim 6 which are identical to construed terms in Claims 1 or 2 (whether agreed or disputed) should receive the same constructions. The remaining terms in this claim do not need to be construed.
9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.	All terms in Claim 9 which are identical to construed terms in Claims 1 or 2 (whether agreed or disputed) should receive the same constructions. The remaining terms in this claim do not need to be construed.